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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,632	03/23/2001	Steven M. Burgarella	111453.128	4639
23483	7590	03/29/2004	EXAMINER	
HALE AND DORR, LLP 60 STATE STREET BOSTON, MA 02109			CROSS, LATOYA I	
			ART UNIT	PAPER NUMBER
			1743	
DATE MAILED: 03/29/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/815,632

Applicant(s)

BURGARELLA ET AL

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because those submitted on March 23, 2001 are small and do not clearly show where reference characters 16, 26 and 44 point in figure 1. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,101,946 to Martinsky in view of US Patent 4,080,607 to Van Breeman et al.

Martinsky disclose a microarray spotting instrument. The spotting instrument

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comprises a printhead and a mounting assembly. The mounting assembly comprises two mounting holes disposed on either side of the printhead. The printhead is of the pin-type, whereby pins for spotting liquid onto a substrate are mounted within the printhead, as recited in claims 4 and 5. The pins are conventionally used with arrays of wells, such as the 96-well plate or the 384-well plate, wherein the wells are separated from one another by 9.0mm or 4.5mm, respectively, as recited in claims 17 and 18 (col. 8, lines 4-12).

Martinsky differ from the instant application in that there is no teaching of the bracket and semi-kinematic mounting system as claimed.

Van Breeman et al teach a printing head assembly comprising a printing head, a bracket assembly and a mounting assembly. The printhead (40) is described in terms of two part – an upper part (41) and a lower part (42). The upper part (41) is considered to be equivalent to Applicants' claimed bracket because Van Breeman et al describes the upper part has containing the fluidics package of the printhead. As a mounting assembly to mount the bracket (upper part 41) to the printhead (lower part 42), Van Breeman et al teach using three ball mounts (48, 49 and 50), as recited in claims 3 and 15. The ball mounts are located between the bracket and the printhead and are positioned in a semi-kinematic shape (V-shape), as shown in figure 19. The ball mounts (48-50) have corresponding ball rests (45-47) to allow the printhead to be mounted to the bracket. Van Breeman et al explain that this assembly provides extremely accurate, easily mated, 3-point interface between the printhead and the bracket (col. 4, lines 17-24). Screws (84) engage the ball mount (49), as recited in claim 9. Mounting fitting (44) provides a positioning structure and impact absorber (51) controls the positioning of the bracket onto the printhead, as recited in claims 10 and 11. With respect to the positional repeatability error recited in claims 7, 8 and 12-14, Van Breeman et al recognize the need to be

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able to reassembly the printhead assembly accurately and easily. The reference further states that the use of a ball mounting assembly provides "extremely" accurate, easily mated reassembly.

Recognizing the disadvantages of mounting systems in microarray spotters such as described in Martinsky, it would have been obvious to one of ordinary skill in the art to modify Martinsky by using the printhead assembly of Van Breeman et al because the Van Breeman et al printhead assembly is disclosed as provide accurate reassembly of the printhead after cleaning or refurbishing. In using the printhead of Van Breeman et al, an improved device would result that will allow an unskilled user to reassemble the printhead assembly.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be obvious, within the meaning of 35 USC 103 in view of the teachings of Martinsky and Van Breeman et al.

Citation of Relevant Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6,447,723 to Schermer et al teaches a microarray spotting instrument comprising a printhead, bracket and sensor assembly.

US Patent 6,594,432 to Chen et al teaches a microarray printing system comprising a printhead and bracket assembly.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256.

The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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March 18, 2004


Jili Warden
Supervisory Patent Examiner
Technology Center 1700